concentrations when the treated and untreated stall groups were compared at individual time points. Alphacypermethrin-treated HDPE mesh could be used under temperate climatic conditions to reduce exposure of horses in jet stalls to AHS vectors.

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Surveillance program for Equine Influenza Virus in the United States (2010-2013)

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Recent surveillance studies for equine respiratory viruses have shown that equine influenza virus (EIV) remains a prevalent viral respiratory pathogen of horses throughout the USA and Europe. Due to the highly contagious nature and rapid spread of EIV, this virus poses severe financial implications for the horse industry. The objective of this voluntary surveillance study was to gain a better understanding of the prevalence and epidemiology of EIV shed by horses presented to veterinarians with an upper respiratory tract (URT) infection from March 2010 to November 2013. Equine practitioners throughout the United States (239 practices in 38 states) were asked to collect nasal secretions from equine patients with signs of acute URT infection. A questionnaire was used to collect information pertaining to patient demographics and clinical signs. Samples were tested by qPCR for the presence of EIV. Categorical analyses were performed using a Pearson's chi-square test to determine the association between observations (age, breed, gender, use, vaccination and clinical signs) and EIV. Further, categorical observations from EIV positive horses from March 2010 to November 2013 were compared to previous data from March 2008 to February 2010 (60 EIV PCR positive horses). Sequencing analysis of the *HA1* gene of EIV was performed on 35 different EIV isolates to determine their sequence homology. A total 2,375 horses were enrolled with 230 (9.7%) index cases testing PCR positive for EIV. EIV positive horses in the 1-5 and 6-10 year age group, as well as Quarter Horses, were over-represented, while stallions/colts were under-represented. Fever, nasal discharge and coughing were more commonly observed in EIV positive horses than the entire study population. EIV positive cases from the 2010-2013 study period were significantly older and more often vaccinated against EIV compared to EIV positive animals from the 2008-2010 study period. Among the 84/230 EIV (+) horses with a confirmed vaccination status, 46% were vaccinated within the previous 6 months and 31% vaccinated within 12 months. All the sequenced EIV isolates belonged to the clade 1 Florida sublineage. This study provides valuable contemporary information on the frequency of EIV detected by qPCR and underscores the fact that older and previously vaccinated horses were susceptible to EIV. There was evidence for lack of vaccine effectiveness following use of inactivated EIV vaccines currently available, including those containing contemporary strains such as A/equine/Ohio/1/2003.

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The importance of biosecurity

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Biosecurity is essential to patient care and excellent care cannot be achieved without measures aimed at preventing and or minimizing the spread of contagious infectious diseases. Infectious pathogens are a serious threat to human and animal health. In human medicine the improvements in medicine, public health and social standards have led to a paradoxical increase in exposure and susceptibility to pathogens. It could be argued that the same trend is occurring in veterinary medicine with more intensive production systems, increased veterinary hospital specialization with higher case load and sicker patients. Moreover the extensive use of antibiotics in humans and animals has added to the selective pressures for development of microbial resistance, thus antibiotic stewardship should be paramount within a biosecurity program. Infectious disease outbreaks are very costly for both the human and the veterinary care system. A survey of veterinary teaching hospitals in North America revealed that 82 % reported an outbreak of an infectious disease. *Salmonella enterica* was the leading cause of outbreaks (65 %) followed by methicillin resistant *Staphylococcus aureus* (42 %). The importance of nosocomial Salmonellosis lays on its high mortality rate (30 to 60%). Ambulatory equine practices generally deal with healthy populations, in which vaccination is considered to be the main tool for preventing the spread of infectious diseases. However other forgotten practices such as proper environmental disinfection, isolation, hand hygiene, equipment disinfection and education, must also be part of a comprehensive protocol for prevention and control of pathogens. In the author's experience, there has been a shift towards treating sicker animals at the farm, here it is paramount to educate farm personnel and implement strong biosecurity measures in order to prevent the spread of contagious diseases to the healthy population. If biosecurity is not practiced, veterinarians could carry infectious diseases to a large number of farms and for long distances. Therefore proper hygiene, protective clothing and disinfection should be part of the tools that ambulatory practitioners use to prevent infectious diseases spreading. Biosecurity does not stop with us veterinarians: we must also educate our clients about the importance of these practices. This is especially important for horse shows where large numbers of horses concentrate transiently – which is highlighted by the resent EHV-1 outbreaks. These types of outbreaks are very costly for the equine industry due to diagnostic testing, veterinary bills, and cancelled competitions, loss of clients, bad publicity, and law suits. Having in place strict biosecurity measures before, during and after such events would help to prevent or minimize the consequences of disease outbreaks, thus saving money and lives. The implementation of infection prevention measures reduce the need to use antibiotics, decrease costs and saves lives.

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Why do we need to monitor and "treat" the environment?

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The environment and fomites play important roles in the transmission of pathogenic microorganisms that can survive on surfaces for prolonged periods of time; this is true for human and veterinary medicine. The colonized or infected patient play a key role in contamination of environmental surfaces and or fomites; in turn personnel using poor biosecurity practices, such as lack of hand hygiene or improper footwear cleanliness, can aid with the dissemination of environmental pathogens. Furthermore substandard cleaning and disinfection possess a risk for the next animals occupying that environment, such as a contaminated stall, to become colonized or infected. In human health care hand/glove contamination are strongly correlated with environmental contamination, that is the more contaminated the environment is the more likely hands will be contaminated and aid with the